HEME : Health and Medical Journal
pISSN : 2685 – 2772
eISSN : 2685 – 404x
Available Online at :https://jurnal.unbrah.ac.id/index.php/heme/issue/view/88

Demographic Characteristics and Treatment Patterns of Tinea Corporis at a Tertiary Referral Hospital in Surakarta, Indonesia

Nila Kusumasari[1]*, Nurrachmat Mulianto [1], Utiya Nur Laili [1], Firdausul Marifah [1], Aulia Yasmin [1], Laura Noviani [1]

[1]Department of Dermatology and Venereology, Faculty of Medicine, Sebelas Maret University/Dr. Moewardi Regional General Hospital, Surakarta – Indonesia
E-mail: nilakusumasari13@gmail.com

Abstrak

Latar Belakang: Tinea corporis merupakan infeksi jamur superfisial yang umum disebabkan oleh dermatophytes yang menginfeksi kulit. Prevalensi tinea corporis tinggi di negara tropis seperti Indonesia. Namun, data epidemiologi lokal masih terbatas. **Tujuan**: Penelitian ini bertujuan untuk mendeskripsikan karakteristik klinis dan demografis pasien dengan tinea corporis yang berobat ke Poliklinik Dermatologi dan Venereologi di Rumah Sakit Umum Dr. Moewardi, Surakarta, antara Januari 2020 dan Desember 2024. **Metode**: Penelitian ini merupakan studi analitik retrospektif yang memanfaatkan data sekunder dari rekam medis pasien tinea corporis yang berobat di Poliklinik Rawat Jalan Dermatologi dan Venereologi RSUD Dr. Moewardi selama periode penelitian. **Hasil:** Penelitian ini melibatkan 167 pasien dengan diagnosis tinea corporis. Mayoritas pasien berjenis kelamin perempuan (57,5%) dan berada pada kelompok usia dewasa (64,7%). Sebagian besar pasien memiliki tingkat pendidikan menengah (55,7%) serta pekerjaan sebagai ibu rumah tangga (18%) dan karyawan sektor swasta (18%). Berdasarkan Body Mass Index (BMI), 50,3% pasien memiliki berat badan normal. Sebanyak 24,5% termasuk overweight dan 12,6% obesitas. Komorbiditas ditemukan pada 59,9% pasien. Terapi yang paling sering diresepkan meliputi antijamur topikal (87,4%). Terapi adjuvan diberikan pada 83,8% pasien. Antijamur sistemik diberikan pada 58,7% pasien. **Kesimpulan**: Sebagian besar pasien tinea corporis di Poliklinik Dermatologi dan Venereologi RSUD Dr. Moewardi merupakan perempuan dewasa dengan status gizi normal dan tingkat pendidikan menengah. Tatalaksana yang paling sering digunakan adalah antijamur topikal. Terapi tambahan diberikan pada pasien dengan komorbiditas. Antijamur sistemik digunakan pada proporsi pasien yang bermakna dengan temuan komorbiditas.

Kata Kunci: *Tinea corporis*, Dermatofitosis, Epidemiologi, Terapi antifungal

Abstract

Background: *Tinea corporis is a common superficial fungal infection caused by dermatophytes that infect the skin. The prevalence of tinea corporis remains high in tropical countries such as Indonesia; however, local epidemiological data are still limited.* ***Objective:*** *This study aims to describe the clinical and demographic characteristics of patients with tinea corporis presenting to the Dermatology and Venereology Outpatient Clinic at Dr Moewardi General Hospital, Surakarta, between January 2020 and December 2024.* ***Method:*** *This retrospective analytical study utilized secondary data obtained from the medical records of patients diagnosed with tinea corporis who presented to the Dermatology and Venereology Outpatient Clinic at Dr Moewardi General Hospital.* ***Results:*** *This study included 167 patients diagnosed with tinea corporis. The majority were female (57.5%) and adults (64.7%). Most patients had a middle level of education (55.7%) with occupations primarily as housewives (18%) or private sector employees (18%). Based on the Body Mass Index (BMI), 50.3% of patients had normal body weight, while 24.5% were overweight and 12.6% were obese. Comorbidities were*

found in 59.9% of patients. The most frequently prescribed therapies included topical antifungals (87.4%), adjunctive therapy (83.8%), and systemic antifungals (58.7%). ***Conclusion:*** *Most tinea corporis patients at the Dermatology and Venereology Clinic of Dr. Moewardi Hospital were adult females with normal nutritional status and a middle level of education. The most commonly used treatments were topical antifungals, Followed by additional therapy in patients with comorbidities and systemic antifungals with a significant proportion of patients presenting with comorbidities.*

Keywords*: Tinea corporis, Dermatophytosis, Epidemiology, Antifungal therapy*

I. INTRODUCTION

Tinea corporis is a superficial dermatophyte infection affecting glabrous skin, excluding the scalp, palms, soles, and groin. It is caused primarily by species of Trichophyton, Microsporum, and Epidermophyton. Tinea corporis remains a common dermatological problem worldwide, particularly in tropical and subtropical regions, where warm and humid conditions promote dermatophyte proliferation and enhance transmission via direct contact and contaminated fomites, thereby contributing to its high prevalence. [1,2]

In developing countries, tinea corporis constitutes a substantial proportion of dermatophytosis cases encountered in daily dermatology practice. Factors such as overcrowding, poor hygiene, excessive sweating, and frequent physical contact contribute to its high prevalence.[3] Indonesia, as a tropical country, continues to report a significant burden of dermatophyte infections, including tinea corporis.[4]

Host-related factors also contribute significantly to the development of tinea corporis. Adults are more frequently affected due to greater occupational exposure and increased physical activity, whereas comorbid conditions such as diabetes mellitus, obesity, and immunosuppression may predispose individuals to initial infection or recurrence.[5,6]

Despite its high prevalence, local epidemiological data on tinea corporis in Indonesia remain limited, particularly regarding patient characteristics, diagnostic approaches, and treatment patterns. Such data are essential to guide clinical decision-making and optimize management strategies in daily practice.[7] Therefore, this study aimed to describe the demographic characteristics, supporting examination results, and treatment modalities of tinea corporis patients attending the Dermatology and Venereology Outpatient Clinic of a regional public hospital.

II. MATERIALS AND METHODS

This retrospective analytical study was conducted using secondary data obtained from medical records. The study population comprised all new patients diagnosed with tinea corporis at the Dermatology and Venereology Outpatient Clinic of Dr. Moewardi General Hospital, Surakarta, from January 2020 to December 2024. Patients with a confirmed diagnosis of tinea corporis and complete medical records were included, while those with incomplete data were excluded. Total sampling was applied. The variables collected included age, sex, educational level, occupation, body mass index, presence of comorbidities, results of supporting examinations (potassium hydroxide [KOH] examination and fungal culture), and types of treatment administered. Supporting examinations such as KOH and fungal culture were not routinely performed in all patients and were conducted based on clinical indications. Therefore, these variables were analyzed based on available data from patients who underwent the examinations. Data were analyzed using descriptive statistics and presented in tables and narrative form. This study received ethical approval from the Ethics Committee of Dr. Moewardi General Hospital, Surakarta.

III. RESULTS AND DISCUSSION

A total of 167 patients met the inclusion criteria during the study period. Female patients accounted for 57.5% (n = 96), while males comprised 42.5% (n = 71). The majority of patients were adults (64.7%, n = 108), followed by elderly individuals (28.7%, n = 48) and adolescents (6.6%, n = 11). More than half of the patients had a secondary level of education (55.7%, n = 93). The most common occupations were

housewives (18.0%, n = 30) and private-sector employees (18.0%, n = 30). With respect to nutritional status, 50.3% (n = 84) had normal Body Mass Index (BMI), whereas 24.5% (n = 41) were overweight and 12.6% (n = 21) were obese. Comorbidities were identified in 59.9% (n = 100) of patients (Table 1). The predominance of adult females is consistent with reports from tropical settings, where humid environments and close contact facilitate dermatophyte transmission, and adult predominance has been associated with occupational exposure and activities that promote sweating and skin maceration.[3,8,10,18] The high burden of comorbidities observed in this cohort is in line with evidence that chronic conditions such as diabetes mellitus and obesity impair cutaneous barrier function and host immune responses, thereby facilitating fungal persistence and recurrence.[5,11,12]

TABLE 1. BASELINE CHARACTERISTICS OF TINEA CORPORIS PATIENTS

Characteristics	n	%
Sex		
Male	71	42.5
Female	96	57.5
Age group		
Adolescents	11	6.6
Adults	108	64.7
Elderly	48	28.7
Education level		
Primary	41	24.6
Secondary	93	55.7
Higher	33	19.7
Occupation		
Housewife	30	18
Private-sector employee	30	18
Entrepreneur	24	14.4
Unemployed	18	10.7
Student	24	14.4
Retired	6	3.6
Unemployed	12	7.1
Farmer	10	6
Laborer	11	6.6
Teacher	2	1.2
Body Mass Index		
Underweight	21	12.6
Normal	84	50.3
Overweight	41	24.5
Obese	21	12.6
Comorbidity		
Absent	67	40.1
Present	100	59.9

Supporting examinations were not performed in all patients. Potassium hydroxide (KOH) examination was conducted in 42.5% of cases, with positive findings in 42.3% of those examined. Fungal culture was performed in 22.7% of patients, of whom 57.9% yielded positive results (Table 2). This reflects routine outpatient practice in which the diagnosis of tinea corporis is frequently established clinically. Although KOH examination is a rapid and inexpensive diagnostic tool, its sensitivity varies with specimen quality and examiner expertise.[13] Fungal culture, while considered a reference standard, is constrained by longer turnaround time and resource availability in routine settings.[14,20]

TABLE 2. RESULTS OF SUPPORTING EXAMINATIONS

Examination	Total examined n (%)	Positive n (%)	Negative n (%)
KOH	71 (42,5%)	30 (42,3%)	41 (57,7%)
Fungal culture	38 (22,7%)	22 (57,9%)	16 (42,1%)

Regarding treatment patterns, topical antifungals were the most frequently prescribed therapy (87.4%), followed by adjunctive therapy, which consisted of non-antifungal supportive treatments such as emollients, antihistamines, topical corticosteroids, and immunosuppressive agents, administered based on clinical indications and comorbid conditions (83.8%) and systemic antifungals (58.7%). Among systemic agents, itraconazole (30.5%) and ketoconazole (23.9%) were most commonly used, whereas miconazole (51.5%) and ketoconazole (36.0%) predominated among topical preparations (Table 3). The predominance of topical therapy aligns with recommendations for localized and uncomplicated tinea corporis, given favorable safety profiles and adequate efficacy.[15,16,17] The relatively high use of systemic antifungals likely reflects extensive lesions, chronic or recurrent disease, and the substantial proportion of patients with

comorbidities. Current guidance supports systemic therapy in widespread, refractory, or recurrent disease and in patients with significant host-related risk factors.[5,16,19,20]

TABLE 3. TREATMENT MODALITIES ADMINISTERED

Treatment	n	%
Systemic antifungals	98	58,7
Itrakonazole	51	30,5
Ketokonazole	40	23,9
Flukonazole	6	3,6
Terbinafine	1	0,6
Topical antifungals	146	87,4
Ketokonazole (topical)	60	36
Mikonazole (topical)	86	51,5
Phototherapy	5	3
Adjunctive therapy	140	83,8

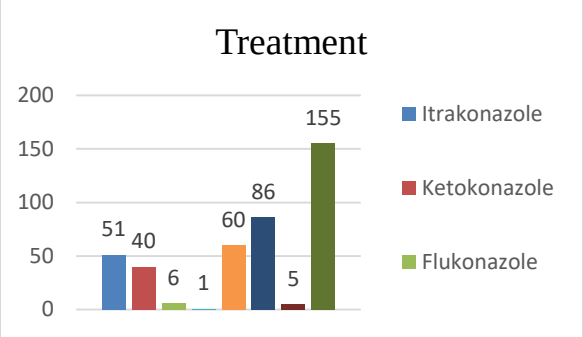

FIG 1. DISTRIBUTION OF TREATMENT MODALITIES

Overall, these findings highlight the substantial burden of comorbidities among patients with tinea corporis and support individualized treatment selection based on disease extent and host-related factors.[5,11,12] The retrospective design and reliance on medical records impose limitations, including incomplete documentation and heterogeneity in diagnostic and therapeutic practices, which may introduce information and selection bias. Therefore, future studies should adopt prospective or multicenter designs with standardized diagnostic criteria, systematic data collection, and consistent treatment protocols to enhance data quality and improve the generalizability of findings. Despite these limitations, the present study provides a clinically relevant overview of patient characteristics, diagnostic practices, and treatment patterns in a tertiary referral setting, reflecting real-world clinical practice and offering valuable insights to inform routine care and guide future research.

IV. CONCLUSION

This study demonstrates that most patients with tinea corporis attending a tertiary dermatology outpatient clinic in Surakarta were adult females with a secondary level of education and predominantly normal nutritional status, with a substantial proportion presenting with comorbidities. Topical antifungals were the most frequently used therapy, while adjunctive therapy and systemic antifungals were commonly prescribed in patients with comorbidities and more extensive or persistent disease, reflecting pragmatic treatment patterns in routine clinical practice. These findings provide locally relevant epidemiological and therapeutic insights that may inform individualized management strategies in similar tropical settings. Future studies with prospective designs, standardized diagnostic confirmation, and longitudinal follow-up are warranted to better delineate treatment outcomes, recurrence rates, and the impact of comorbidities on disease course, thereby strengthening the evidence base for optimizing care of tinea corporis.

V. ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to the Department of Dermatology and Venereology, Faculty of Medicine, Sebelas Maret University, and Dr. Moewardi Regional General Hospital, Surakarta, for institutional support and access to medical records that made this study possible. We also thank the medical record officers and outpatient clinic staff for their assistance in data retrieval and administrative support during the study period.

REFERENCES

[1]. Perhimpunan Dokter Spesialis Kulit dan Kelamin Indonesia (PERDOSKI). Panduan Praktik Klinis bagi Dokter Dermatologi, Venereologi, dan Estetika Indonesia. Jakarta: PERDOSKI; 2024. p. 493.
[2]. Mukhopadhyay AK. A historical note on the evolution of "ringworm". Indian J Dermatol Venereol Leprol. 2019;85(1):125–128.
[3]. Kruithoff C, Gamal A, McCormick TS, Ghannoum MA. Dermatophyte infections worldwide: increase in incidence and associated antifungal resistance. Life. 2024;14(1):1–13.
[4]. Susanto IK. Tinea corporis therapy. J Kedokt Meditek. 2023;29(1):82–88.
[5]. Leung AKC, Lam JM, Leong KF, Hon KL. Tinea corporis: an updated review. Drugs Context. 2020;9:1–12.
[6]. Hay RJ, Ashbee HR. Fungal infections. In: Kang S, Amagai M, Bruckner AL, Enk AH, Margolis DJ, McMichael AJ, et al., editors. Fitzpatrick's Dermatology. 9th ed. New York: McGraw-Hill Education; 2019. p. 2951–3008.
[7]. Yee G, Syed HA, Al Aboud AM. Tinea corporis. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025.
[8]. Moskaluk AE, VandeWoude S. Current topics in dermatophyte classification and clinical diagnosis. Pathogens. 2022;11(9):1–12.
[9]. Widhidewi NW, Purnama NKA, Budiapsari PI, Widiawati S. Incidence of dermatophytosis based on age and gender at the regional general hospital in Gianyar district hospitals. Muhammadiyah Med J. 2023;4(2):72–77.
[10]. Basak P, Mallick B, Pattanaik S. Prevalence of dermatophytic infections including antifungal susceptibility pattern of dermatophytes in a tertiary care hospital. Int J Res Med Sci. 2019;7(3):699–704.
[11]. Balamuruganvelu S, Reddy SV, Babu G. Age and gender-wise seasonal distribution of dermatophytosis in a tertiary care hospital, Puducherry, India. J Clin Diagn Res. 2019;13(2):1–5.
[12]. Li Q, Li J, Zhi H, Lv W, Sang B, Zhong Y, et al. Epidemiological survey of 32,786 culture-positive dermatophytosis cases in Hangzhou from 2018 to 2023. Mycopathologia. 2024;189(6):1–10.
[13]. Theodorakis N, Feretzakis G, Hitas C, Kreouzi M, Kalantzi S, Spyridaki A, et al. Immunosenescence: how aging increases susceptibility to bacterial infections and virulence factors. Microorganisms. 2024;12(10):1–18.
[14]. Tannou T, Koeberle S, Manckoundia P, Aubry R. Multifactorial immunodeficiency in frail elderly patients: contributing factors and management. Med Mal Infect. 2019;49(3):167–172.
[15]. Woo YR, Kim HS. Interaction between the microbiota and the skin barrier in aging skin: a comprehensive review. Front Physiol. 2024;15:1–14.
[16]. Chanyachailert P, Leeyaphan C, Bunyaratavej S. Cutaneous fungal infections caused by dermatophytes and non-dermatophytes: an updated comprehensive review of epidemiology, clinical presentations, and diagnostic testing. J Fungi. 2023;9(6):1–15.
[17]. Gupta AK, Foley KA. Evidence-based update on antifungal therapy for superficial fungal infections. Am J Clin Dermatol. 2019;20(2):293–307.
[18]. Ameen M. Epidemiology of superficial fungal infections. Clin Dermatol. 2020;38(3):297–304.
[19]. Verma S, Madhu R. The great Indian epidemic of superficial dermatophytosis: An appraisal. Indian J Dermatol. 2017;62(3):227–236.
[20]. Nenoff P, Verma SB, Ebert A, Süß A, Fischer E, Krüger C. The current Indian epidemic of superficial dermatophytosis: a systematic review. Mycoses. 2019;62(4):336–356.